NPT/CONF.2010/24

2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

20 April 2010

Original: English

New York, 3-28 May 2010

Progress report by the Provisional Technical Secretariat of the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization prepared for the 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

I. Introduction

1. The information provided in the present report indicates that since 2005 significant progress has been made by the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization and the Provisional Technical Secretariat in all areas of implementation of their respective mandates. This includes, with respect to development of the verification system of the Comprehensive Nuclear-Test-Ban Treaty, progress in areas such as the establishment and sustainment of the International Monitoring System, improvements to the International Data Centre processing methods and capabilities, the development of a more integrated and effective approach to provisional operations and maintenance of the International Monitoring System, and further steps towards achieving on-site inspection operational readiness at entry into force of the Treaty. Finally, outreach activities have been pursued more strategically with the aim of promoting, among other things, entry into force and greater universality of the Treaty, as well as broader participation by States signatories in the work of the Commission, and enhanced access to International Monitoring System data and International Data Centre products.

2. The Treaty lies at the very heart of the global nuclear non-proliferation and disarmament regime. The Treaty represents a milestone in the efforts to prohibit any nuclear-weapon test explosion or any other nuclear explosion in any environment and is, thus, a key component of the international nuclear non-proliferation and disarmament regime. The Comprehensive Nuclear-Test-Ban Treaty was preceded by the 1963 Partial Test Ban Treaty, which contributed to the reduction of fallout in the atmosphere by prohibiting the testing of nuclear weapons under water, in outer space, or in the atmosphere, but did not ban underground testing. Significantly, the preamble of the Partial Test Ban Treaty expressed the determination of States parties to "achieve the discontinuance of all test explosions of nuclear weapons for all time".

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3. The 1968 Treaty on the Non-Proliferation of Nuclear Weapons recalls in its preamble the determination of Parties to the Partial Test Ban Treaty to ban all explosive testing of nuclear weapons for all time. However, it was not until 1993 that the United Nations General Assembly passed a consensus resolution endorsing a mandate for the negotiations of a comprehensive nuclear-test-ban treaty through the Conference on Disarmament. Accordingly, the Ad Hoc Committee on a Nuclear Test Ban initiated official comprehensive nuclear-test-ban treaty negotiations in January 1994. The following year, the 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons adopted, as part of a package that included the indefinite extension of the Treaty, a set of principles and objectives on nuclear non-proliferation and disarmament. The completion of a comprehensive nuclear-test-ban treaty no later than 1996 was included as step one of a three-part disarmament action plan. Negotiations at the Conference on Disarmament lasted until 10 September 1996, when the Treaty was adopted by the United Nations General Assembly.

4. The outcome of the 2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons further underscored the inextricable linkage between the Comprehensive Nuclear-Test-Ban Treaty and the international non-proliferation regime. The Final Document adopted by the parties to the Treaty contains, in paragraph 15, 13 practical steps for the systematic and progressive efforts to implement article VI of the Treaty. The first step notes the "importance and urgency of signatures and ratifications, without delay and without conditions" in order to achieve the entry into force of the Comprehensive Nuclear-Test-Ban Treaty, and the second step notes a moratorium on nuclear tests pending the entry into force of the Treaty.

5. The importance of the entry into force of the Comprehensive Nuclear-Test-Ban Treaty has been widely recognized by the international community. This support is evidenced through the overwhelming support for the 2009 Comprehensive Nuclear-Test-Ban Treaty resolution adopted in the First Committee of the United Nations General Assembly, the Security Council call upon States to bring the Comprehensive Nuclear-Test-Ban Treaty into force as expressed in its resolution 1887 (2009), and the unprecedented high-level attendance at the 2009 Conference on Facilitating the Entry Into Force of the Comprehensive Nuclear-Test-Ban Treaty. Moreover, announced nuclear tests by the Democratic People's Republic of Korea in October 2006 and May 2009 reconfirmed the central role of the Comprehensive Nuclear-Test-Ban Treaty regarding the nuclear non-proliferation and disarmament regime and underscored the importance of its entry into force. The events, coupled with recent political developments and declarations in the area of arms control, has generated a new momentum towards the Treaty's entry into force.

II. Comprehensive Nuclear-Test-Ban Treaty

6. The Comprehensive Nuclear-Test-Ban Treaty prohibits all nuclear test explosions, whether for a military or any other purpose. It covers all environments and does not set a threshold from which the prohibitions should apply. The preamble of the Treaty states that its objective is "to contribute effectively to the prevention of the proliferation of nuclear weapons in all its aspects" and "to the process of nuclear disarmament".

7. The Comprehensive Nuclear-Test-Ban Treaty, and the international norm of non-nuclear testing, has grown in strength since its adoption in 1996. In order for the Treaty to enter into force, it must be ratified by the 44 States listed in Annex 2 to the Treaty. To date, the Treaty has been signed by 182 States, with 151 ratifying States, including 35 of the 44 States listed in Annex 2 to the Treaty. These States formally participated in the 1996 session of the Conference on Disarmament, and possessed nuclear power or research reactors at the time.

III. Preparatory Commission of the Comprehensive Nuclear-Test-Ban Treaty Organization

8. In advance of the Treaty's entry into force and the establishment of the Comprehensive Nuclear-Test-Ban Treaty Organization, a Preparatory Commission for the organization was established by States signatories on 19 November 1996. The purpose of the Commission is to carry out the necessary preparations for the effective implementation of the Comprehensive Nuclear-Test-Ban Treaty and to prepare for the first session of the Conference of the States parties to the Treaty. The Commission has two main activities. The first consists of undertaking all necessary preparations to ensure that the verification regime foreseen by the Treaty is capable of fulfilling its operational mission upon entry into force of the Treaty. The second is the promotion of the Treaty's signature and ratification to achieve entry into force.

IV. Provisional Technical Secretariat

9. As at 12 April 2010, the Provisional Technical Secretariat comprised 258 staff members from 74 countries. The number of staff in the Professional category was 167. It is committed to a policy of equal employment opportunity, aiming in particular at improving the representation of women, especially in the Professional category. The approved budget for the Commission for 2010 amounts to US$ 115.6 million. From 1997 up to and including the financial year 2010, total budgetary resources approved for the Commission amounted to US$ 897.3 million and €283.3 million. Of this total, 79.5 per cent has been dedicated to verification-related programmes, including US$ 306.6 million or 26.9 per cent for the Capital Investment Fund for the installation and upgrade of International Monitoring System stations.

V. Verification regime

10. The Comprehensive Nuclear-Test-Ban Treaty provides for the establishment of a unique global verification regime that consists of the International Monitoring System, a consultation and clarification process, on-site inspections, and confidence-building measures. Data from International Monitoring System stations are to be sent through a secure global satellite network known as the global communications infrastructure. The data is routed from the satellites to hubs on the ground and then transmitted through terrestrial links to the International Data Centre for processing and analysis. All International Monitoring System data and International Data Centre products are made available to States.

International Monitoring System

11. The International Monitoring System is to consist of a network of 321 monitoring stations and 16 radionuclide laboratories. After entry into force of the Comprehensive Nuclear-Test-Ban Treaty, these facilities will produce data to detect possible nuclear explosions and provide evidence thereof to State parties for verification of compliance with the Treaty.

12. Since 2005, significant progress has been made towards the completion of the International Monitoring System network in all four technologies: seismic, hydroacoustic, infrasound and radionuclide. As at 30 April 2010, 268 International Monitoring System stations had been installed, which represents 83 per cent of the total number of stations envisaged by the Treaty. Of these, 245 stations (76 per cent) and 10 radionuclide laboratories (63 per cent) have been officially certified as meeting the specifications of the Commission. This is an increase of 115 stations and five laboratories.

International Data Centre

13. The mission of the International Data Centre is to support the verification responsibilities of States by providing products and services necessary for effective global monitoring after entry into force of the Treaty. Prior to entry into force, its task is to establish and test the facilities that will handle the data from the International Monitoring System stations. In this regard, provisional operation of as many stations as possible is crucial in developing International Data Centre data processing capabilities pending entry into force of the Treaty. The data collected by the International Monitoring System stations are transmitted via the global communications infrastructure to the International Data Centre and are made available to national data centres. Ensuring data availability and data quality is a priority issue for the International Data Centre.

On-site inspections

14. As a final verification measure, an on-site inspection is provided for in the Treaty. The purpose of an on-site inspection, which can be invoked only after entry into force, will be to clarify whether a nuclear-weapon test or any other nuclear explosion has been carried out in violation of the Treaty and to gather facts, as far as possible, that might assist in identifying any possible violator. Inspections are likely to consist of field activities that would incorporate the use of visual, seismic, geophysical and radionuclide analysis techniques. In 2008, the Commission conducted an integrated field exercise in Kazakhstan in order to test the preparedness of the on-site inspection regime. Work that was carried out subsequent to a review of the integrated field experience and follow-up process eventually culminated in the preparation of a comprehensive on-site inspection action plan. The Commission continues to build up the on-site inspection regime as part of the Comprehensive Nuclear-Test-Ban Treaty verification regime in accordance with Treaty requirements.

VI. Entry into force and universalization

15. Since the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, held in May 2005, the Comprehensive Nuclear-Test-Ban Treaty has been signed by 7 States and ratified by 30 States, including two Annex 2 States (Colombia and Viet Nam). The thirty-third session of the Preparatory Commission took note of the further progress made towards the much desired goal of universalization of the Comprehensive Nuclear-Test-Ban Treaty, and emphasized the Treaty's role as an essential pillar of the nuclear disarmament and non-proliferation framework, together with the vital importance of securing the early entry into force of the Treaty.

Article XIV process

16. Under article XIV, if the Treaty has not entered into force three years after the date of the anniversary of its opening for signature, a conference of those States that have already ratified it may be held to decide by consensus what measures consistent with international law may be taken to accelerate the ratification process and to facilitate entry into force. States signatories will also be invited to attend the conference. Three such conferences have been convened since the 2005 Review Conference of the Parties to the Treaty.

17. From 21 to 23 September 2005, 117 States gathered at United Nations Headquarters for the fourth Conference on Facilitating the Entry Into Force of the Comprehensive Nuclear-Test-Ban Treaty (article XIV conference).[1] Representatives from 105 States participated in the fifth article XIV conference convened on 17 and 18 September 2007 in Vienna. The sixth article XIV conference was held on 24 and 25 September 2009, in New York, with 103 ratifying States and States signatories participating. During the first plenary meeting, the Conference adopted a Final Declaration calling upon all States that had not done so to sign and/or ratify the Treaty (see CTBT-Art.XIV/2009/6). The Declaration includes a number of measures to promote the entry into force of the Comprehensive Nuclear-Test-Ban Treaty.

18. In the course of the follow-up to the 2009 article XIV conference, and in accordance with paragraph 11 (c) of the Final Declaration, France and Morocco, which presided over that Conference, were selected as coordinators of the process "to promote cooperation, through informal consultations with all interested countries, aimed at promoting further signatures and ratifications".

Outreach activities

19. The purposes of Provisional Technical Secretariat outreach activities include enhancing understanding of the Treaty among States, media, civil society and the general public; promoting signature and ratification of the Treaty, and thereby its universality and entry into force; assisting States signatories in the implementation of their national verification measures and in the realization of the benefits to be

[1] Article XIV conferences have been held in Vienna (1999, 2003 and 2007) and in New York (2001, 2005 and 2009).

gained from the peaceful applications of the verification technologies; and assisting in promoting the participation of States signatories in the work of the Commission.

20. In its bilateral interactions to assist States in promoting the entry into force and the universality of the Treaty, the Provisional Technical Secretariat has placed emphasis on those States listed in Annex 2 to the Treaty, as well as on those States hosting International Monitoring System facilities. Since 2005, 13 regional international cooperation workshops have been held. These workshops have stressed the importance of national implementation measures and the signature and the ratification of the Treaty.

Events in the Democratic People's Republic of Korea

21. The Democratic People's Republic of Korea announced on 9 October 2006 that it had conducted a nuclear test explosion. Although only partially completed and operating in test mode, over 20 seismic stations of the International Monitoring System located throughout the world, including one as far away as South America, detected signals originating from the 2006 event. Noble gas readings picked up by a station in Canada more than 7,500 kilometres away from the Democratic People's Republic of Korea demonstrate the global reach of the verification system. Observations from the station were shown to be consistent with hypothesized release from the Democratic People's Republic of Korea event, providing compelling evidence of the nuclear character of the event. A detailed analysis of the event on 9 October 2006 was issued and distributed to States signatories only two days after the event.

22. On 25 May 2009, the Democratic People's Republic of Korea announced that it had conducted a second nuclear test explosion. Twenty-three primary seismic monitoring stations registered the event and were used in the initial automatically generated event list, compared with the 13 that were used in 2006. States signatories received the first automatic estimation of time, location and magnitude hours before the Democratic People's Republic of Korea publicly announced the test. The Provisional Technical Secretariat also produced bulletins reviewed by International Data Centre analysts within the timeline anticipated for operation after entry into force. The bulletins were based on data from 61 seismic stations of the International Monitoring System, reflecting the improvement in coverage of the International Monitoring System since the 2006 event.

23. The vast improvement in system performance between October 2006 and May 2009 evince the Commission's continued success in developing the Comprehensive Nuclear-Test-Ban Treaty verification regime. During the 2009 event, the system's timely, integrated and coherent performance demonstrated a high level of reliability. The system has proven to be a valuable investment by the States signatories to ensure that no nuclear test goes undetected.